UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

March 6, 2020 LR-16J

VIA ELECTRONIC MAIL

Mr. Cary Mathias
Regional Waste Manager
ArcelorMittal USA
4020 Kinross Lakes Parkway
Richfield, OH 44286-9000

RE: Review of Remedial Study Report – Former Coke Plant
Tecumseh Redevelopment, Inc.
ArcelorMittal USA LLC – Indiana Harbor West
EPA ID No. IND 005 462 601

Dear Mr. Mathias

The U.S. Environmental Protection Agency has reviewed the February 6, 2020 *Remedial Study Report - Former Coke Plant* (Report) submitted to EPA by ArcelorMittal, USA. EPA's review focused on technical consistency and adherence to policy and regulations. Comments on the Report are enclosed. EPA requests that ArcelorMittal review the comments and provide a response along with a revised Report within 45 days from the date of this letter.

If you have any questions about this letter, please contact me at (312) 353-9229 or pursel.brandon@epa.gov.

Sincerely,

Digitally signed by BRANDON PURSEL
Date: 2020.03.06 15:31:11 -06'00'

Brandon Pursel
Project Manager, Corrective Action Section 3
Land, Chemicals & Redevelopment Division

Enclosure

cc: John Hill (ArcelorMittal)

EPA TECHNICAL REVIEW
REMEDIAL STUDY REPORT – FORMER COKE PLANT
ARCELOR MITTAL INDIANA HARBOR WEST – EAST CHICAGO, INDIANA

ArcelorMittal submitted the *Remedial Study Report – Former Coke Plant* dated February 6, 2020 for the ArcelorMittal Indiana Harbor West facility located in East Chicago, Indiana. The purpose of the Report was to summarize the methodologies used to evaluate remedial technologies to be used to address LNAPL and LNAPL-related groundwater contamination at the Former Coke Plant. EPA requested the report as part of the site-wide strategy to address contamination as a result of historic operations at facility.

GENERAL COMMENTS

The Report incorporates conclusions from several years of studies performed at the Former Coke Plant using several different technologies independently. Following these studies and using various metrics recommended by groups such as the Interstate Technology and Regulatory Council (ITRC) and the American Petroleum Institute (API), ArcelorMittal was able to conclude which technologies are implementable. The Report indicates that in-situ chemical oxidation (ISCO), surfactant enhanced recovery (SER) and thermal methods such as steam enhanced extraction (SEE) would all be successful or potentially successful technologies that would be used address LNAPL at the Former Coke Plant.

The possibility of a multi-remedy approach had been informally discussed previously, and EPA believes this approach should be considered in this Report for several reasons. First, based on the results of the field pilot studies and bench scale studies, it appears that each technology may be successful however may not be successful in singularity toward achieving cleanup goals such as meeting Data Quality Objectives (DQOs). SER may address much of the LNAPL but would likely result in eventual asymptotic removal rates requiring a reevaluation of the selected remedy's ability to meet DQOs in the future. Second, it is not likely SER would address dissolved phase or residual phase LNAPL in a reasonable amount of time. Groundwater cleanup goals based on current and reasonably anticipated future use scenarios are over three orders of magnitude less than concentrations reported at several monitoring wells, and natural source zone depletion rates appear to be low based on existing groundwater quality and analytical data. Results included in the December 2018 *Pre-Design Report* suggests that even with biostimulation, microbial activity or redox conditions are low and not likely to significantly reduce groundwater concentrations. For these reasons, EPA believes the Work Plan should also discuss the applicability or possibility of multiple technologies being used in a step-wise strategy.

SPECIFIC COMMENTS

Section 3: Conceptual Site Model

1. *Section 3.3.1*: EPA recognizes that previous discussions and reports, such as the referenced SLERA and Pre-Design Report, have included EPA's acceptance of the dilution-attenuation methodology that has been used to assess risks to off-site receptors in surface water bodies. It is important to note that these factors have limited use toward final cleanup goals, however they can be useful for prioritization especially when some contaminants are highly volatile, such as benzene.

2. *Section 3.3.2*: The focused HHRA performed in 2016 and updated as part of the Remedial Study states that no constituents in groundwater pose an unacceptable risk for human receptors. This conclusion considers the fill material and geotextile membrane, as well as the dig-permit program at ArcelorMittal which specifies standard operating procedures when employees or construction workers may come into contact with deep contaminated media. No revision is necessary, but it is important to note that this claim can only be supported while this program and these site features are in place. If the site is ever sold or redeveloped, a site specific HHRA is recommended to evaluate the assumption the dig-permit program is no longer in place and the fill and membrane is no longer in place.

Section 4: Corrective Measures Objectives

3. The objectives described are lacking in some specific detail, however this comment may be appropriately addressed in the CMIWP discussed in Section 8 of the Work Plan. First, a decision matrix which balances performance metrics and decision endpoints while also complimenting performance measures associated with the selected remedy should be proposed. Examples of a decision endpoint might include asymptotic reduction of LNAPL balanced with operation costs and the estimated volume of product remaining. Note that typically multiple lines of evidence are preferred. ArcelorMittal should also specify which conditions from the CA725 and CA750 are being considered, including DQOs for the contaminants targeted by the selected remedy strategy. Finally, surface water concentrations are based on modelling performed to estimate dilution and attenuation factors which were then used to estimate risk to receptors. Per comment 1, above, this strategy provides limited use for corrective measures objectives outside of prioritization. Instead, objectives addressing human exposures in surface water should reflect 327 IAC 2-11-5 of the State of Indiana rules regarding groundwater quality.